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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,529	11/25/2003	Anwu Li	M596 0008	9115

720 7590 03/04/2005

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EXAMINER

EDMONDSON, LYNNE RENEE

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 03/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/720,529

Applicant(s)

LI, ANWU

Examiner

Lynne Edmondson

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14, 17, 18 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-4, 9, 10, 13, 14, 17 and 18 is/are rejected.  
7) ☒ Claim(s) 5-8, 11 and 12 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 13 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Ruckle et al. (USPN 4982893).

Ruckle teaches a method of bonding thin metals under heat and pressure in a controlled atmosphere containing hydrogen under pressure (col 7 line 35 – col 8 line 22 and col 9 lines 1-8) particularly in a HIP process (col 9 lines 1-8). The gas may include an inert (col 8 lines 37-60).

3. Claims 1, 2, 5, 6, 13, 14 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Juda et al. (USPN 5904754).

Juda teaches a method of bonding a Pd foil to a metallic part by subjection to heat and pressure of about 500 psi in a controlled atmosphere containing hydrogen for about 12 hours (col 3 lines 1-54).

Claims 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ruckle et al. (USPN 4982893).

Ruckle teaches a method of bonding thin metals under heat and pressure in a controlled atmosphere containing hydrogen under pressure (col 7 line 35 – col 8 line 22 and col 9 lines 1-8) particularly in a HIP process (col 9 lines 1-8). The gas may include an inert (col 8 lines 37-60). However the hydrogen pressure is not disclosed.

It would have been obvious to one of ordinary skill in the art at the time of the invention to keep the hydrogen pressure steady but low (col 8 lines 29-36) to prevent explosion (col 8 lines 45-60).

6. Claims 2-4, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruckle et al. (USPN 4982893) in view of Kayser et al. (US 2004/0232211 A1).

Ruckle teaches a method of bonding thin metals under heat and pressure in a controlled atmosphere containing hydrogen under pressure (col 7 line 35 – col 8 line 22 and col 9 lines 1-8) particularly in a HIP process (col 9 lines 1-8). The gas may include an inert (col 8 lines 37-60). However the HIP process is not further disclosed.

Kayser teaches bonding of thin metal sheets (paragraph 15) in a conventional HIP bonding process wherein the pressure is up to 1500 psi at a temperature of 315C to 1218 C (paragraphs 32, 33 and 35) for up to 10 hours (paragraph 42).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ a standard HIP heating and pressing schedule under hydrogen to ensure a strong, reliable bond (Ruckle, col 1 line 60 – col 2 line 27) while preventing oxidation and explosion (Ruckle, col 8 lines 45-60).

7. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ruckle et al. (USPN 4982893) in view of Demaray et al. (USPN 5595337).

Ruckle teaches a method of bonding thin metals under heat and pressure in a controlled atmosphere containing hydrogen under pressure (col 7 line 35 – col 8 line 22 and col 9 lines 1-8) particularly in a HIP process (col 9 lines 1-8). The gas may include an inert (col 8 lines 37-60). Although it is taught that some metals require a clean, smooth surface prior to bonding, this process is not further disclosed.

Demaray teaches a method of bonding two metal objects which are both polished and subjected to heat and pressure for bonding (col 15 lines 1-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to polish the members prior to bonding ensure a strong, reliable bonds which are free of defects (Ruckle, col 1 lines 54-59).

***Response to Arguments***

8. Applicant's arguments with respect to claims 1-14, 17 and 18 have been considered but are moot in view of the new ground(s) of rejection.

***Allowable Subject Matter***

9. Claims 5-8, 11 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hunt et al. (USPN 6073830, polished metal, heat, pressure, atmosphere), Shimizu et al. (USPN 6405761 B1, polished metal, heat, pressure), Roa et al. (US 2003/0190486 A1, Pd-Ru) and Barnett (USPN 6555778 B1).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (571) 272-1172. The examiner can normally be reached on Monday through Thursday from 6:30 a.m. to 5 p.m.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lynne Edmondson  
Primary Examiner  
Art Unit 1725

LRE

LYNNE R. EDMONDSON  
PRIMARY EXAMINER

